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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,777

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Hiromitsu Tsuji

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EXAMINER

THOMPSON RUMMEL, PONDER N

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

07/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,777	Applicant(s) TSUJI ET AL.	
	Examiner PONDER N. THOMPSON RUMMEL	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION***Claim Rejections - 35 USC § 103***

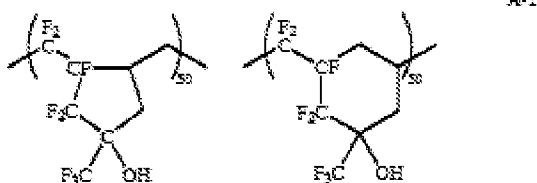
1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toishi et al (US 2003/0236351) in view of Lamanna et al (US 5,554,664).

With respect to claims 1, 2, and 4, Toishi et al discloses a positive resist composition comprising:

- A polymer component of formula (A-1) below (paragraph [0233])



that meets the limitations of applicant's formula (5) wherein x and y are 50% mol each and R⁵ is a hydrogen atom;

- An acid generator (paragraphs [0043] and [0117])
- A nitrogen containing organic compound, such as triethylamine (paragraph [0221]) and;
- A method of forming a resist pattern comprising:

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- Applying the resist film on a substrate (paragraph [0229]);
- Exposing the film for patterning; and
- Heat-treating and developing the film after exposure (paragraph [0229]).

However, Toishi et al fails to disclose the use of a sulfonylimide acid generator as disclosed by the applicant.

Lamanna et al discloses the use of the sulfonylimide as an energy sensitive initiator/catalyst. The cationic portion of the initiator includes organic onium cation such as triarylsulfonium where the aryl group is defined as a substituted or un-substituted aromatic group (column 5, lines 46-51) The anionic portion of the initiator or catalyst included fluorinated bis alkyl or aryl sulfonylimide



(column 6, lines 63-67) such as (column 7, lines 50-58).

These compounds have improved solubility in organic solvents, exhibit minimal corrosiveness when coating and adhesives are prepared using the compounds, generated highly reactive initiator or catalyst upon activation by energy (See Abstract). Therefore, it would have been obvious for one of ordinary skill within the art to use the fluorinated sulfonylimide

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initiator/catalyst of Lamanna et al within the composition of Toishi et al to minimize corrosiveness and improve solubility of the resist.

3. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toishi et al (US 2003/0236351) in view of Lamanna et al (US 5,554,664) as applied to claims 1 and 4 above, and further in view of Okubo et al.

With respect to claims 3 and 5, Toishi et al in view of Lamanna et al disclose the photoresist composition of claims 1 and 4 above, however Toishi in view of Lamanna fail to disclose the use of an organic carboxylic acid or a phosphorus acid within the resist composition.

Okubo et al discloses a photosensitive laminate and process of forming a pattern containing a positive resist composition wherein the laminate is applied to thin film of SiON that is supplied on a substrate, exposed and post-baked and then developed with a developer to form a pattern (paragraph [0120]). The resist composition comprises an organic carboxylic acid such as a benzoic acid (paragraph [0114] or an oxoacid of phosphorus (a phosphorus acid) such as phosphoric acid (paragraph [0115]). The use of the carboxylic acid and/or phosphorus acids inhibits the decrease of sensitivity or improving substrate dependency (paragraph [0112]). The resulting resist composition can exhibit improved pattern definition as well (paragraph [00117]). Therefore, it would have been obvious to one of ordinary skill within the art at the time of the invention to include the use of a carboxylic acid or a phosphorus acid of Okubo et al within

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the composition of Toishi in view of Lamanna to improve sensitivity and pattern definition.

Response to Arguments

4. Applicant's arguments filed June 18, 2008, with respect to the rejection(s) of claim(s) 1-5 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Toishi and Lamanna.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PONDER N. THOMPSON RUMMEL whose telephone number is (571)272-9816. The examiner can normally be reached on Monday-Friday 7:00 am - 4:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. N. T./
Examiner, Art Unit 1795

/Cynthia H Kelly/
Supervisory Patent Examiner, Art Unit 1795